

## Lake Van Drilling Project “PaleoVan”

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Lake Van is the fourth largest terminal lake in the world (volume 607 km<sup>3</sup>, area 3,570 km<sup>2</sup>, maximum depth 460 m), extending for 130 km WSW-ENE on the Eastern Anatolian High Plateau, Turkey. The annually-laminated sedimentary record of Lake Van promises to be an excellent palaeoclimate archive because it potentially yields a long and continuous continental sequence that covers several glacial-interglacial cycles (ca. 500 kyr). Therefore, Lake Van is a key site within the International Continental Scientific Drilling Program (ICDP) for the investigation of the Quaternary climate evolution in the Near East. Based on the high-resolution seismic data and multidisciplinary scientific work, it is planned to drill a series of sites in Lake Van in the frame of ICDP in summer 2010. The geochronological precision on a decadal or even annual scale will allow comparisons not only with astronomical cyclicity but also signals below the frequency of Milankovitch cycles, such as North Atlantic Oscillation, which may have also affected the past climate system of the eastern Mediterranean region. As a closed and saline lake, Lake Van reacts very sensitively to lake level changes caused by any alterations in the hydrological regime in response to climate change. Tephra layers, documented in short cores and also expected in the deep drill cores of Lake Van sediments, allow reconstructing larger volcanic events and environmental impacts. The short cores from Lake Van show also strong evidence of earthquake-triggered microfaults, interpreted as seismites. Similar features are expected to be found in the deeper sections. The unique setting of Lake Van, which records simultaneously the volcanic as well as the earthquake history, will also allow establishing possible coincidence between larger earthquakes and volcanic events.

Based on high resolution reflection seismic data, four sites have been selected for the drilling campaign. The ‘Ahlat Ridge’-Site is the most important site. It is the deepest site (water depth ~375m) where we plan to recover a complete sedimentary section for paleoclimatic investigations. The ‘Northern Basin’ Site is located in a small basin close to the northern shore of Lake Van. The proximity to the Quaternary volcanoes will allow studying major eruptions of the volcanoes and associated volcanogenic hazards. Two sites in different water depths of the Ereğli Fan are planned to investigate lake level fluctuations and the evolution of Lake Van. Additionally all sites will allow to identify seismites for analyzing the seismic activity in the past. The rise of the human culture and the transport of mantle fluid through continents are additional questions, which will be addressed by the drilling campaign. Drilling will take place during three months during July, August and September 2010. We will be able to present the first initial results of this campaign during the meeting in Thessaloniki.

## Tectonometamorphic evolution of the Rhodope orogen: Constraints from macro- and microstructures, petrology and geochronology

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Tectono-stratigraphy, macro- and microstructures, petrology and geochronology have been combined into a comprehensive model for the tectono-metamorphic evolution of the Rhodope orogen from the Jurassic to the Early Paleogene. High-grade deformed and metamorphosed continental and mantle rocks in two study areas in the Central and Eastern Greek Rhodope are part of a suture zone (Rhodope Suture Zone: RSZ) which extends over at